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THE SOUTH AMERICAN INDIAN IN HIS RELATION TO GEOGRAPHIC ENVIRONMENT.

By WILLIAM CURTIS FARABEE.

(Read April 14, 1917.)

Man, of whatever race, as we know him to-day is to such an extent a product of his environment that we can have very little idea of what he was in his primitive state. We sometimes speak of primitive men but we mean men in a low stage of culture without any reference whatever to time or age. There are no primitive men, neither is there primitive culture. Both have been so modified by their environment that they give us very little idea of what the first men and their culture were like. From the beginning both have developed in complete agreement with their environment.

It is said that man differs from the other animals in that he is able to overcome his natural environment. Man has been able to profit by his knowledge of nature's laws, but he has not overcome them. He must depend upon natural products for sustenance and hence is limited in migration and habitat. In the cold climates of high altitudes and high latitudes he is limited by his food supply to the line fixed by nature for the growth of plants and animals. In the hot, moist climate of the tropics he is deprived of energy and ambition and degenerates. He has not yet overcome nature but he has succeeded better than his fellows in adapting himself to nature's requirements. His individual handicap at the beginning of life makes for the greater development of his race. His prolonged period of growth allows the persistent forces of environment to act upon his developing body and fit it for its habitat. If his migrations do not take place too rapidly or do not extend over too wide a range of geographic conditions these body changes become habitual and the race survives. The new characters developed are retained. There is some question as to whether or not the characters acquired by the ancestors are inherited, but it is

certain that the habitat with all the geographic factors which have produced those characters is inherited. If the effect of environment is upon the individual and does not become permanently fixed in the race and if it acts only as an inhibitor in the development of characteristics it has the force of an inheritance because it never ceases to operate. Hence the race develops true to the environment. Primitive man must have originated in a tropical but not a jungle country where the environment made little demand upon his growing intellect. The search for food probably took him temporarily outside of his first habitat. After a time the pressure of numbers would prevent his return. His customs and habits would change to meet the new conditions. So, no doubt, he has slowly moved through the long period of his history, from one stage to another, from one environment to another, and from one development to another. These developments were not necessarily from a lower to a higher plane. He had little choice; the quest for food or the pressure from numbers either called or drove him onward from the old to newer fields. He followed the animals and may have learned from them to build his shelter and to store his food against a future need. Necessity developed forethought and made him an inventor. The forces of nature were first feared and then followed. He became as mobile as the wind and the water by whose aid he traveled. After he had thus occupied the habitable globe each section continued to develop a culture, peculiar to its own environment. Every geographical factor had its influence in this development. Sea and bay, lake and river, mountain and valley, forest and desert, temperature and humidity, wind and rain, sunshine and cloud, each and all had their effect in isolating or uniting, separating or deflecting, expanding or confining, the migrating peoples and in determining their physical development, their forms of culture, their economic and political organization. Man has followed no plan, has had no standards. Whatever advancement he has made has been by chance rather than by choice, by accident rather than by conscious direction.

In the migration of man from his original home probably in southern Asia, by way of Behring Strait and North America to the tropics again he completed the cycle of climatic conditions. His

long and varied experience had made him wise. Yet he was continually on the march. Crowded into the neck of the Isthmus of Panama he pushed on through and found another continent which, like the one he was leaving, lent itself to a north-south migration with the routes well marked. The Orinoco, the great branches of the Amazon and the La Plata together with the Andes and the coast all offered direct lines of travel, but they all led to hard conditions. The mountains were too high, the forests too dense, the south too cold and the tropics too hot to make a strong appeal. But there was no possibility of retreat until the farthest corner had been reached and turned. By the time of the Discovery he had overrun the whole continent and a return migration was in progress across the isthmus and through the West Indies.

When the first migration entered the continent the people were deflected by the mountains to the two coasts. Those who continued down the west coast, forced to compete with the rank jungle growth for supremacy in a humid debilitating climate, were unable to establish themselves and develop a high culture. So they moved on to the interior plateaus where they found more congenial conditions and where they left evidence of an advanced culture.

Those who made their way to the coast south of the equator must have been surprised to step out of the jungle into an immense desert country, the most arid in the world, stretching away for nearly 2,000 miles as a narrow fringe along the sea. Here they found fertile valleys, watered by the innumerable small rivers and streams which, fed by the melting of the perpetual snows of the mountain tops, made their way to the sea or lost themselves in the desert. These valleys separated by trackless sands offered both food and security. The sea made no call. There were few protected harbors along the great stretch of coast; no outlying islands to be inhabited and no timber for canoes. They became an agricultural people living in villages and using the rivers for irrigating purposes. Irrigation guaranteed regular crops and hence a constant food supply. It also developed inventiveness and coöperation. Their common dependence upon the same water supply developed social organization and a strong government. As these different valleys had the same products there was very little commerce

between them and each was allowed to develop its own culture. The archæological remains show the results of this development from independent centers.

Near the southern end of the continent climatic and topographic conditions are reversed. The coast and western slopes of the mountains are forested, while the interior is a semi-desert. The deeply embayed coast has a chain of outlying islands. The steep mountains come down to the sea leaving little arable land. The forests furnish an abundance of suitable timber for canoes. All these elements of environment unite to force the unfortunate tribes who have been pushed along into this region to become a maritime people. The inhospitable snowclad mountains prevent contact with the interior tribes. They were shut off also from the people of the northern coast by rough seas and steep harborless shores. They were thus limited to the islands and the channels between. Their isolation and their hard conditions of life with an uncertain food supply has prevented them from developing a high culture. They have had no leisure. All their energies have been taxed to the uttermost to secure their daily bread.

The nearest neighbors of these canoe people are living under worse conditions even because they were an interior people who have been forced down across the straits into the last point of land on the continent, from which there is no possible escape. With hard conditions and scant food supply they lead a precarious life. They must live in small separate groups in order to make the most of their wild foods. These small units have developed a rugged independence which will permit of no control. There is no necessity nor opportunity for community effort and hence there are no chiefs and no organized government. Left behind and held at bay in a most rigorous climate they have done well to maintain themselves even in their present culture. Their simple life reveals their origin. The absence of the canoe proves them to belong to the mainland east of the mountains where there are no navigable rivers and a harborless cliff coast for a thousand miles. The inhabitants of this plain have always been hunters and not fishermen.

Farther north on the same coast the narrow fringe of lowland is fertile and contains a number of deep bays. Here the people

became agriculturists but added to their food supply shellfish from the sea. Many large refuse heaps mark the centers of occupation. The steep coast range of mountains prevented them from passing into the interior where other cultures are found.

Along the north coast from the Amazon to the isthmus representatives of the same people occupy the savannahs and the forested interior. Here the savannah coast tribes with their broader view and easy communication in every instance have developed the higher culture.

While the coast peoples have had every variety of climatic condition due to the change of latitude from the equator to the most southern inhabited point in the world those of the mountains have had much the same variety due to change in elevation from a tropical sea level to the highest habitat of man. The mountains on account of their great height, hard conditions and lack of arable land served at first only as a barrier to deflect and to separate the migrating peoples. After a time the pressure of the populations in the lowland valleys on the west forced the people up the slopes and into the high valleys and plateaus between the Cordilleras. Here they found the Quinoa, the oca, and the potato, the hardiest and most useful food plants for cold climates. On the high plateaus they found among other animals the Llama, one of the most useful animals known to man. It offered its flesh for food, its coat for clothing, its hide for harness, and its back for burdens. The high valley dwellers became agriculturists and traders while their neighbors were first hunters, then herdsmen. The cold, raw winds sweeping across the broad open plateaus drove the people to the leeward of the mountains for protection where they formed small communities, each herdsman having his separate corral. These people while living in these remote places were in trade relations with the agriculturists in the valleys. They had a constant food supply in their herds and while conditions of life were somewhat severe they were secure, contented and happy. The broad horizon and invigorating climate stimulated thought. Their occupations gave them leisure for contemplation. So here among the shepherds music and myth reached their highest development.

In the center of this high plateau area is located a very large

lake with no outlet to the sea. The valleys all led to the lake. There was no passageway to a more congenial climate. There were no forests whose timber could be used for buildings and canoes but there was abundance of stone in the mountains and turf in the fields for houses and reeds in the swamps about the lake for balsas or rafts. Great towns developed on the shores of the lake which could be reached either by water or by land. The lake exerted a unifying influence for either commerce or war. Magic gave place to a highly developed form of sun worship with a priestly class headed by a great chief who assumed autocratic power. There was soon a desire to extend the functions of this centralized government. Following the command of the spirit they moved their center of dominion northward across the divide to the head of a fertile valley and established a city. With the advantage of organization and location they easily overcame one group after another of the valley peoples who were unable to unite for common defence on account of their natural boundaries. Thus the city became the center of a great empire with a stable government and a state religion. The arts and industries were encouraged, schools and churches established and a high state of civilization secured.

The large number of tribes inhabiting the interior of the continent have had a very different history. The great plains of the southeast have few natural boundaries to confine the people, so from the beginning they have dissipated their energies in spreading far and wide over the whole area without developing one single great center. They have exhausted themselves in the running and have left nothing of importance behind.

In the eastern highlands of Brazil away from all migration routes and cut off from the coast are found a number of tribes belonging to the same stock. As a whole they are the most backward people of the continent. They may be a remnant of the first tribes to inhabit the plateau region who have been pushed aside into the out-of-the-way corners by stronger more advanced tribes who came to the plateau in later times. They occupy the only mountains east of the Andes which are high enough to form a barrier or undesirable enough to serve as place of retreat.

The rivers and valleys north and south and the low divide on the

west all lead to the savannah plateau west of these highlands. This became a meeting place for the migrations from all these directions and also a place of dispersion. The routes of forward or backward migration of three great stocks may be traced to this center, by tribes scattered along the way. Representatives of one stock apparently descended the La Plata River to the sea and passed along the coast three thousand miles into the Amazon valley; another followed down the southeastern branches of the Amazon, down the main river and around the coast to the West Indies; while a third occupied the higher branches of the Amazon and crossed the watershed to the north coast.

The Amazon Valley, an area nearly as large as the United States, was occupied by hundreds of tribes belonging to several different linguistic stocks and all in very much the same stage of cultural development. The whole area is well within the tropics and shut off from the high cultures of the west by impassable mountains. It is a humid tropical forest jungle with a most monotonous debilitating climate. Nature here is overpowering, because she makes life so easy there is no necessity for effort. There is no struggle of intelligence against the forces of nature, because she provides the necessities of life ready made. The bounties of nature gratify the enfeebled ambition without labor. The daily needs have daily satisfactions. The climate is so mild that little or no clothing is required nor any habitations except the simplest shelters which may be built in a few hours when needed. There is no necessity for exercise of forethought, invention, or ingenuity. There is leisure but no energy. The law of social gravitation does not operate because there is no necessity for coöperation. The people live in small isolated groups because they require space for hunting and fishing. Hence there can be no central government. The sluggish rivers offered easy transportation. As there were no natural boundaries to confine the people and no central authority the different groups moved about at will coming into contact with other groups of different stocks and mingling cultures. There was no commerce because there was no variety of natural products in any one area not common to every other. There is little relief of land, change of climate, or variety of soil. The culture is as uni-

form as the environment. A characterless country is producing a characterless people. The Amazon Valley was the last great region to be occupied by man. There is no evidence of great antiquity either in archæological remains or in present cultures. The languages spoken show a close relationship with outside groups. The cultures, always first to reveal the effects of a change of environment, show certain similarities, but are decadent in form.

All the evidence at hand tends to show that the culture of the South American Indian has developed in perfect harmony with his geographic environment.

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